

REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-8 will be pending. By this amendment, claims 1-8 have been amended. No new matter has been added.

§103 Rejection of Claims 1-8

In Section 2 of the Office Action, claims 1-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Glenn (U.S. Patent No. 5,978,023) in view of Inuiya (U.S. Patent No. 6,222,986). Claims 1-8 have been amended to address the rejection.

In the Background section of the Specification, it was stated that “[i]n case of dealing with a still image in the camcorder, since two fields of the interlace-scanned image sensing signal form an image corresponding to one frame, a time delay between fields causes deterioration of image quality. Therefore, recording/reproducing of a still image is carried out by converting an interlaced signal into a progressive scan signal. ... In contrast, in an electronic still camera specialized for still images, a still image sensing signal with high quality obtained by progressive scanning from a solid image sensor capable of progressive scanning is recorded onto a recording medium. ... In a solid image sensor capable of progressive scanning, a still image sensing signal with high quality can be obtained by progressive scanning. However, as shown in FIG. 12, since charge storing is carried out in one frame period, the image is blurred when a moving object is picked up. A problem hence appears in that the image cannot be quite still.”

Background of the Specification, page 2, lines 1-15.

To address the above-described shortcomings of the conventional video camera apparatus, embodiments of the present invention provide methods and apparatuses for a single-unit video and image sensing capable of obtaining still images without blurring.

For example, the structure of apparatus claim 1, as presented herein, includes:

“a solid image sensor having an electronic shutter for outputting an image-sensing signal in a progressive scan mode, said solid image sensor including a plurality of pixel sensors configured to process charges accumulated on the pixel sensors as the image-sensing signal,

wherein the charges accumulated and stored for a first field of a particular frame are discharged before the charges accumulated for a second field of the particular frame are stored, and

wherein the stored charges are read out in next two fields of a subsequent frame; and

drive control means for controlling the electronic shutter of the solid image sensor at a field cycle of a standard television system used as a basic cycle, thereby to output the image sensing signal from the solid image sensor in the progressive scan mode.”

(emphasis added)

Therefore, the structure of apparatus claim 1 provides a new way to output the image sensing charges of the pixels obtained by the photosensors of the solid image sensor (i.e., the CCD) in a progressive scan mode. Specifically, “charges are all discharged out in the first field and next charges are stored in the second field. The stored charges read out in the next two fields equivalent to another one frame. This means that the charges for one field are read out, and therefore, blurred images are not formed ...” *Specification, page 10, lines 8-12.*

By contrast, Glenn merely states that “[i]f progressive scan is used it is usually advisable to use an electronic shutter at 1/60 second exposure (at a 2:1 loss in sensitivity) whenever scenes have rapid motion in order to reduce motion blur.” Thus, Glenn fails to teach or suggest discharging all charges of the first field before storing next charges of the second field so that the charges can be read out in the next two fields of the subsequent frame.

Further, it was indicated, in Section 2 of the Office Action, that “Inuiya teaches digital video still camera that is capable [of capturing] a still image in progressive scan mode.”

Therefore, it is submitted that Glenn and Inuiya, individually or in combination fails to teach or suggest discharging all charges of the first field before storing next charges of the second field so that the charges can be read out in the next two fields of the subsequent frame.

Based on the foregoing discussion, claim 1 should be allowable over the combination of Glenn and Inuiya. Furthermore, since independent claims 2-8 closely parallel, and include substantially similar limitations as, independent claim 1, claims 2-8 should also be allowable over the combination of Glenn and Inuiya.

Accordingly, it is submitted that the Examiner’s rejection of claims 1-8 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1-8 are respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes that have been made to these claims were not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes were made simply for clarification and to round out the scope of protection to which Applicant is entitled.

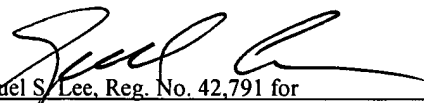
In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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